ease return signod/recorded to: Ilsbury Madison & Sutro LLP teffectual Property Group nth Floor, Cast Tower 100 New York Avenue, N.W. lashington, D.C. 20006 3918

	_	
Alty, Dkt.	PMS 256828	
	M# 1	Client Ret.

ASSIGNMENT of U.S. Origin Patent Application (to Corporation) (or Limited Partnership)

WHEREAS, the undersigned, to wit:

	·
1)	Andrew Fire
<u>?</u>)	Si Q. Xu
3)	Mary K. Montgomery
4)	Stephen A. Kostas
5)	Lisa Timmons
(hc	reinafter collectively ASSIGNOR), has/have made an Invention known as Dkt. PMS 256628
and	d entitled Genetic Inhibition by Double-Stranded RNA
for	which an application for Letters Patent of the United States
	was executed even date herewith and is about to be filed in the United States Patent and Trademark Office;
\boxtimes	was filed on December 18, 1998 , Appln. No. 09/ 215, 257 ;
	AND WHEREAS The Carnegie Institution of Washington (hereinafter ASSIGNEE), a corporation
	nited Partnership duly organized and existing under the laws of the District of Columbia and having its
	ncipal office and place of business at 1530 P Street, N.W., Washington, DC 20005, desires to acquire an
ınt	erest thorein;

NOW, THEREFORE, in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR, does hereby sell, assign and transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right, title and interest to the said invention in the United States and all foreign countries, as described in the aforesaid application, and to the said application and to all continuations, divisions, reissues and substitutes of said application, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and ASSIGNOR hereby authorizes and requests the Commissioner of Patents to Issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives.

PAT-1140 1167

AND ASSIGNOR horeby agrees to execute any papers requested by ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEF, and without further remuneration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of forcign applications and the perfecting of title thereto in said ASSIGNEE.

NOTE: The undersigned hereby authorizes Pllisbury Madison & Sutro 1 LP of the above address to insert hereon any further identification necessary or desirable for recordation of this document.

Executed on the date(s) below indicated.

Signature	Date Signed	Witness	
1) x Andrew Fire	× 1/15/99	the girds a	Englas.
2) Name: Si Q. Xu		·	
Name: Mary K. Montgomery			
Name: Stephen A. Kostas			
5) Name: Lisa Timmons			

PAT-5140 11/97

Please return signed/recorded to:
Pillsbury Madison A Sutro LLP
nteflectual Property Grnup
Ninti- Floor, Eact Tower
1100 New York Avenue, N.W.
Washington, D.C., 20005-3018

<u>`</u>_.

Atty. Dkt.	PMS 255628			
	M#	1	Client Ref.	_

ASSIGNMENT of U.S. Origin Patent Application (to Corporation) (or Limited Partnership)

WHEREAS, the undersigned, to wit-

) Andrew Hire	
?) Sia-Xu Siqun Xu	——,———————————————————————————————————
B) Mary K. Montgomery	
) Steptien A. Kostas	
o) Lisa Timmons	
hereinafter collectively ASSIGNOR), has/have made an invention known as Dkt.	PMS 256628
and entitled: Genotic Inhibition by Double-Stranded RNA	
for which an application for Letters Patent of the United States was executed even date herewith and is about to be filed in the United States P was filed on December 18, 1998 , Applin. No 09/ 215, 257	atent and Trademork Office;
AND WHEREAS <u>The Camegie Institution of Washington</u> (hereinafter ASSIC Limited Partnership duly organized and existing under the laws of the District of <u>Camegial Partnership</u> office and place of business at <u>1530 P Street, N.W., Washington, DC 200 interest</u> (heroin;	olumbia and having its

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PAT-1148 118/

AND ASSIGNOR hereby agrees to execute any papers requested by ASSIGNEE, its successors, designs and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEE, and without further remuneration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in said ASSIGNEE.

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Executed on the date(s) below indicated.

<u>Sianature</u>	Date Signed	<u>Witness</u>
1) Name: Andrew Fire		
2) Y Name: Si G. Xu Siqun	× 1/12/99	× Hui Shan
Name: Mary K. Montgomery		·
Name: Stephen A. Kostas		
5) Name: Lisa Timmons		· · · · · · · · · · · · · · · · · · ·

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Please return signod/recorded to.
Pillsbury Madison & Sutro LLP
Intellectual Property Group
Nimh Floor, East Tower
1100 New York Avenue, N.W.
Washington, D.C. 20005-3918

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Attv. Dkt.	PM\$ 256628		
	Mit	Glient Ref.	-
	*****	Oucill Inch.	

ASSIGNMENT of U.S. Origin Patent Application (to Corporation) (or Limited Partnership)

WHERFAS, the undersigned, to wit:

its successors, assigns and legal representatives.

1)	Andrew Fire
2) ်	Si Q. Xu
3) `	Mary K. Montgomery
4)	Stephen A. Kostas
5)	Lisa Timmons
(he	reinafter collectively ASSIGNOR), has/have made an invention known as Dkt. PMS 266628
and	entitled Genetic Inhibition by Double-Stranded RNA
tor	which an application for Letters Patent of the United States
	was executed even date herewith and is about to be filed in the United States Patent and Trademark Office; was filed on December 18, 1998. Applin. No. 09/ 215, 257
prii	AND WHEREAS The Camegie Institution of Washington (hereinafter ASSIGNEE), a corporation in the Partnership duly organized and existing under the laws of the District of Columbia and having its incipal office and place of business at 1530 P Street, N.W., Washington, DC 20005, desires to acquire an erest therein;
an an	NOW, THEREFORE, in consideration of the Dollars (\$10.00) and other good and valuable consideration, a receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR, does hereby sell, assign d transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right, title d interest to the said invention in the United States and all foreign countries, as described in the aforesaid plication, and to the said application and to all continuations, divisions, reissues and substitutes of said

application, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other

international agreements to which the United States of America adheres, and ASSIGNOR hereby authorizes and requests the Commissioner of Patents to issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE,

PAT-114N 11/9:

AND ASSIGNOR hereby agrees to execute any papers requested by ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's tull protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEE, and without turther remuneration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in said ASSIGNEE.

NOTE: The undersigned hereby authorizes Pillebury Madison & Sutro LLP of the above address to insert hereon any further identification necessary or desirable for recordation of this document.

Executed on the date(s) below indicated.

<u>Signature</u>	<u>Date Signed</u>	Witness
Name: Andrew Fire		
2) Name: Si Q. Xu		
3) L May K Montgomery Name: Mary K. Montgomery	x-1/29/99	× laturia By far.
Name: Stephen A. Kostas		
Name: Lisa Timmons		

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Please return signed/recorded to: Pillsbury Madison & Sistro LLP Intellectual Property Group Ninth Floor, East Tower 1100 New York Avenue, N.W. Washington, U.C. 20005-3918

Ally. Dkt.	µмs 256828 М#	Client Ref.
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ASSIGNMENT of U.S. Origin Patent Application (to Corporation) (or Limited Partnership)

WHEREAS, the undersigned, to wit:

1)	Andrew Fire
2)	Si Q. Xu
3)	Mary K. Montgomery
4)	Stephen A. Kostas
5)	Lisa Timmons Lisa Timmons PMS 256628 PMS 256628
fo	d entitled: Genetic Inhibition by Double-Stranded RNA d entitled: Genetic Inhibition by Double-Stranded RNA r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States Patent and Trademark Office; r which an application for Letters Patent of the United States Patent and Trademark Office; r which an application for Letters Patent of the United States Patent and Trademark Office; r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which an application for Letters Patent of the United States r which are patent of the United States Patent and Trademark Office; r which are patent of the United States Patent of the United States Patent and Trademark Office; r which are patent of the United States Patent
[was executed even date herewith and is about to one of 215,257 was filed on December 18, 1998 Appln. No. 09/ 215,257
1	AND WHEREAS <u>The Carnegie Institution of Washington</u> (hereinafter ASSIGNEE), a corporation imited Portnership duly organized and existing under the laws of the District of <u>Columbia</u> and having its principal office and place of business at <u>1530 P</u> Street, N.W., Washington, DC 20005, desires to acquire an
	interest therain; NOW, THEREFORE, In consideration of Ten Dollars (\$10.00) and other good and valuable consideration, NOW, THEREFORE, In consideration of Ten Dollars (\$10.00) and other good and valuable consideration, NOW, THEREFORE, In consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR, does hereby soil, assign the receipt and sufficiency of which are hereby acknowledged, representatives, the full and exclusive right, title

NOW, THEREFORE, In consideration of Len Dollars (\$10.00) and out of \$30.000 steels soil, assign the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR, does hereby soil, assign and transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right, title and interest to the said Invention in the United States and all foreign countries, as described in the aforesald application, and to the said application and to all continuations, divisions, reissues and substitutes of said application, together with the right of priority under the International Convention for the Protection of Industrial application, together with the right of priority under the International Convention Models, and any other Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and ASSIGNOR hereby authorizes and international agreements to which the United States of America adheres, and ASSIGNOR interest as ASSIGNEE, requests the Commissioner of Patents to issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives.

PAY-114R 11/97

AND ASSIGNOR hereby agroes to execute any papers requested by ASSIGNEF, its successors, assigns and tegal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEE, and without further remuneration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in said ASSIGNEE.

NOTE: The undersigned hereby authorized Pillsbury Madison & Suito LLP of the above address to insert hereon any further identification necessary or desirable for recordation of this document.

Executed on the date(s) below indicated.

Signature	Date Signed	Witness
1) Name: Andrew Fire	·	
2) Name: SI Q. Xu		
3) Name: Mary K. Montgomery.		
4) Alexandra A. A. Kostas		Statesia J. Engla-
S) Name: Lisa Timmons		

PAT-1118 11/97

Pléase return signed/recoided to: Pillabury Madison & Sutro LLP Intellectual Property Group Nimth Floor, East Tower 1100 New York Avenue, N.W. Washington, D.C. 20005-3918 Atty, Ukt. PMS 256628 Client Ref.

ASSIGNMENT of U.S. Origin Patent Application (to Corporation) (or Limited Partnership)

WHEREAS, the undersigned, to wit:

1)	Andrew Fire	
2)	Si Q. Xu	
3)	Mary K. Montgomery	
4)	Stephen A. Kostas	
5)	Lisa Timmons	
(hei	reinafter collectively ASSIGNOR), has/have made an invention known as Dkt.	PMS 256628
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for	which an application for Letters Patent of the United States	
	was executed even date herewith and is about to be filed in the United States (Patent and Trademark Office;
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pri	AND WHEREAS The Camegie Institution of Washington (hereinafter ASS nited Partnership duly organized and existing under the laws of the District of Concipal office and place of business at 1530 P Street, N.W., Washington, DC 20 prest therein;	Columbia and having its

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PAY-1148 11/57

AND ASSIGNOR hereby agrees to execute any papers requested by ASSIGNEE, its successors, assigns and legal representatives, deemed oscential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

ASSIGNOR furthermore agrees upon request of said ASSIGNEE, and without further remuncration, to execute any and all papers desired by said ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in said ASSIGNEE.

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Executed on the date(s) below indicated.

Signature	<u>Date Signed</u>	<u>Witness</u>
1) Name: Andrew Fire		
2) Name; Si Q. Xu		
Name: Mary K. Montgomery		
4) Name: Stephen A. Kostas		
5) Liga D. Tummer Name: Lisa Timmons	×1/22/00	+ Audith Catallet

PAT-1148 11/97